

WHAT IS CLAIMED IS

- 1 1. A method for updating timing information in a wireless  
2 communication network, comprising:  
3 detecting, at a mobile unit, signal data containing accurate timing  
4 information, wherein said mobile unit is in an area serviced by a base  
5 station;  
6 deriving accurate timing information from said signal data;  
7 generating association data associating said accurate timing  
8 information with base station timing information maintained by said base  
9 station; and  
10 updating network timing information for said base station using said  
11 association data.
- 1 2. The method of claim 1, wherein said network timing information is  
2 updated using timing information received from a plurality of mobile units in  
3 said area.
- 1 3. The method of claim 1 further comprising:  
2 updating network timing information for a plurality of base stations in  
3 said wireless communication network.
- 1 4. The method of claim 3, further comprising:  
2 forwarding portions of said network timing information to said  
3 plurality of base stations in said wireless communication network.
- 1 5. The method of claim 1, wherein said signal data is global positioning  
2 satellite (GPS) signal data.

6. The method of claim 5, wherein said detecting signal data containing accurate timing information comprises:  
receiving, via a GPS antenna, GPS signal data.

1 7. The method of claim 6, wherein said deriving accurate timing  
2 information from said signal data comprises:  
3 deriving GPS timing information from said GPS signal data in said  
4 mobile unit.

1 8. The method of claim 6, wherein said deriving accurate timing  
2 information from said signal data comprises:  
3 deriving GPS timing information from said GPS signal data at a  
4 central network authority.

1 9. The method of claim 7, wherein said generating association data  
2 further comprises:  
3 identifying the base station time at which said GPS signal data is  
4 detected;  
5 forwarding said base station time along with said GPS timing  
6 information to a central network authority; and  
7 generating said association data at a central network authority.

1 10. The method of claim 8, wherein said generating association data  
2 further comprises:  
3 identifying the base station time at which said GPS signal data is  
4 detected;  
5 forwarding said base station time along with said GPS signal data to  
6 said central network authority; and  
7 generating said association data at said central network authority.

1 11. The method of claim 1, wherein said generating association data is  
2 performed at said mobile unit, the method further comprising:  
3 forwarding said association data to a central network authority.

1 12. The method of claim 1, wherein said association data is stored at a  
2 central network authority.

1 13. The method of claim 1, wherein said association data is used to  
2 update data at a central network authority.

1 14. The method of claim 1, further comprising:  
2 repeating said generating and updating each time a mobile unit in  
3 said network detects signal data containing accurate timing information.

1 15. The method of claim 1, further comprising:  
2 repeating said generating and updating each time a mobile unit in  
3 said network is instructed to detect signal data containing accurate timing  
4 information.

1 16. The method of claim 1, further comprising:  
2 forwarding a portion of said network timing information to a second  
3 mobile unit.

1 17. A network timing system, comprising:  
2 a receiver at a mobile unit configured to detect signal data  
3 containing accurate timing information, wherein said mobile unit is in an  
4 area serviced by a base station;  
5 a processing device configured to derive accurate timing information  
6 from said signal data; and  
7 a central network authority, coupled to receive said accurate timing  
8 information and configured to generate association data associating said



3 said mobile unit and said central network authority, is configured to derive  
4 GPS timing information from said GPS signal data.

1 24. The network timing system of claim 23, wherein said association  
2 data comprises:

3 information identifying said base station;  
4 information identifying the base station time at which said GPS  
5 signal data is detected; and  
6 said GPS timing information.

1 25. A network timing method in a network including a central network  
2 authority and a plurality of areas each serviced by at least one base  
3 station, comprising:  
4 detecting, at a mobile unit in one of said areas, GPS signal data;  
5 deriving, at one of said mobile unit and said central network  
6 authority, GPS timing information from said GPS signal data;  
7 associating said GPS timing information with base station timing  
8 information from said base station in said area; and  
9 updating network timing information for said base station using said  
10 GPS timing information and said base station timing information.